CLAIMS

1. A rotating electric machine comprising a magnetic core (1) with a centre axis defining an axial direction, a radial direction and a circumferential direction of the core, said core (1) exhibiting a plurality of slots (2), each slot (2) defining a longitudinal direction comprising an axial directional component and a transverse direction comprising a radial directional component wherein the directions of the slot (2) are defined by is centre plane between the walls of the slot (2), and the slot (2) has a width which is defined as the distance between its walls, an electric winding with a plurality of winding parts (5, 6), extending in the longitudinal direction, being arranged in each slot (2), at least some winding slots (5, 6) in at least some slots being located radially displaced in relation to one another, characterized in that the winding comprises an electric conductor (31) for high voltage, said conductor (31), during at least one full winding turn, being provided with means (32, 33, 34) for essentially enclosing its electric fields, and that at least one pair of adjacently located winding parts (5, 6) in a slot (2) are displaced in the circumferential direction relative to each other.

2. A rotating electric machine according to claim 1, in which, in said pair of adjacently located winding parts (5, 6), the radially innermost part of the outer winding part (6) is located radially inside the outermost part of the inner winding part (5).

3. A rotating electric machine according to claim 1 or 2, in which at least two pairs of winding parts (5, 6) in the slot are displaced in the circumferential direction in relation to each other and wherein the displacement is greater the farther outwards, in the radial direction, the winding parts (5, 6) are located.

4. A rotating electric machine according to any of claim 1 or 2, in which at least some slot (2) along at least part of its transverse direction has a directional component in the circumferential direction.

5. A rotating electric machine according to claim 4, in which at least some slot (2) is at least partially curved in the transverse direction.

6. A rotating electric machine according to claim 5, in which each slot (2) is curved along its whole transverse direction and all the slots (2) have the same radius of curvature.

7. A rotating electric machine according to any of claims 1-6, in which all the slots (2) are parallel in both the longitudinal direction and the transverse direction.

8. A rotating electric machine according to any of claims 1-6, in which at least some slot (2b, 2d) has an increasing width outwards along the transverse direction.

9. A rotating electric machine according to any of claims 1-7, in which at least some slot (2a, 2c) has a constant width in the transverse direction.

10. A rotating electric machine according to any of claims 1-6, in which at least some slot (2c, 2d) in the transverse direction has alternating portions with a larger and smaller width.

11. A rotating electric machine according to claims 10, in which the portions with a larger width have a varying width.

12. A rotating electric machine according to claims 10, in which the portions with a larger width have mutually the same width.

13. A rotating electric machine according to any of claims 1-12, in which the conductor, during at least one full winding turn, is flexible.

14. A rotating electric machine according to any of claims 1-13, in which said means comprise an inner semiconducting layer (32) surrounding the conductor,

an insulating layer (33) surrounding the semiconducting layer (32), and an outer semiconducting layer (34) surrounding the insulating layer (33).

15. A rotating electric machine according to claim 14, in which each semiconducting layer (32, 34) constitutes essentially an equipotential surface.

16. A rotating electric machine according to claim 15, in which the layers (32, 33, 34) adhere to one another along the whole winding, and that said semiconducting layers (32, 34) have substantially the same coefficient of thermal conductivity as the intermediate insulating layer (33).

17. A rotating electric machine according to any of claims 1-16, in which said means (32, 33, 34) are dimensioned to allow a voltage in the conductor which is greater than 72 kV.

ACCEPTED